



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,919	10/28/2003	Hideo Kato	TOW-047	7036

959 7590 02/01/2007  
LAHIVE & COCKFIELD, LLP  
ONE POST OFFICE SQUARE  
BOSTON, MA 02109-2127

EXAMINER
----------

CREPEAU, JONATHAN

ART UNIT	PAPER NUMBER
----------	--------------

1745

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/01/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/695,919

Applicant(s)

KATO ET AL.

Examiner

Jonathan S. Crepeau

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. This Office action addresses claims 1-5. The claims remain rejected for substantially the reasons of record. Accordingly, this action is made final.

### ***Claim Rejections - 35 USC § 102***

2. Claims 1-3 and 5 are rejected under 35 U.S.C. 102(e) as being anticipated by Sugiura et al (U.S. Pre-Grant Publication No. 2003/0068541). In Figure 2, the reference teaches a fuel cell stack comprising end plates (62), terminal plates (60), and a corrugated metal plate (22) adjacent the terminal plate. This plate corresponds to the claimed "heat insulation plate." The plates (22, 24) in the middle of stack assembly correspond to the claimed "separators." Coolant channels (36) are defined between the heat insulation plate and the cell stack assembly. Although the reference does not expressly teach that these channels contain air, they capable of holding air and thus correspond to the claimed "heat insulation air chambers." It is noted that an apparatus must be distinguishable from the prior art in terms of structure rather than function (MPEP 2114). In this case, the coolant channels can be used to hold any number of gases or liquids and thus read on the claimed "air chambers." Further, with regard to claim 2, the protrusions of the heat insulation plate (22) are in thermal contact with protrusions of a separator plate (24).

Thus, the instant claims are anticipated.

***Claim Rejections - 35 USC § 103***

3. Claim 4 is rejected under 35 U.S.C. 103(a) as being obvious over Sugiura et al.

The reference is applied as stated above. However, the reference does not expressly teach that the protrusion defining the heat insulation space has a curved cross section as recited in claim 4.

However, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because it has been held that changes in shape are generally not sufficient to patentably distinguish over a reference (MEP 2144.04). As such, the use of plates having protrusions of a curved cross-section (as opposed to a cross-section having straight sides) in the apparatus of Sugiura et al. is not considered to distinguish over the reference.

***Response to Arguments***

4. Applicant's arguments filed December 28, 2006 have been fully considered but they are not persuasive. Applicants state that "the Sugiura reference does not disclose that an electrically conductive heat insulation plate is interposed between the separator 22 that is at the end of the cell assembly and the terminal plate 60." Applicant's argument is well-taken; however, it is still believed that the plate (22) at the far left side of Figure 2 can be termed a "heat insulation plate" that is interposed between a separator and the terminal plate. The claims do not specify the structure of the claimed separator, and it submitted that any plate (other than an MEA per se) to the right of, and including, element 26 in Figure 2 of the reference can be considered to be a

“separator.” Although the amendatory language recites that the heat insulation plate is “interposed between one of said separators that is at an end of said cell assembly in the stacking direction and said terminal plate,” the language does not state that the heat insulation plate must directly touch or contact a separator, as is shown in the Figures of the present application. An amendment to this effect may be filed after final rejection, but entry of such is not a matter of right and may be considered to raise further issues. Applicants may wish to further specify that the separator is “corrugated” since the plate (26) shown in the reference as directly contacting the heat insulation plate is substantially flat.

### *Conclusion*

5. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 1745

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (571) 272-1299. The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan, can be reached at (571) 272-1292. The phone number for the organization where this application or proceeding is assigned is (571) 272-1700. Documents may be faxed to the central fax server at (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jonathan Crepeau  
Primary Examiner  
Art Unit 1745  
January 29, 2007